Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Recommendations Approved by World Radiocommunication Conference Advisory Committee	)	IB Dkt. No. 16-185
	)	
	)	

COMMENTS OF DISH NETWORK CORPORATION AND ECHOSTAR SATELLITE OPERATING CORPORATION

DISH Network Corporation (together with its affiliates, "DISH") and EchoStar Satellite Operating Corporation (together with its affiliates, "EchoStar") (collectively, the "Parties") submit these comments on the World Radiocommunication Conference 2019 Advisory Committee ("WAC-19") recommendations on issues to be considered at the 2019 World Radiocommunication Conference ("WRC-19").[1] Specifically, we urge the Commission to adopt View A for Agenda Item 9.1/Issue 9.1.1 in Attachment A and present this to the U.S. Department of State as the U.S. proposal to WRC-19, and that the United States submit this proposal to the upcoming meeting of CITEL PCC.II for Agenda Item 9.1, Issue 9.1.1 for adoption as a CITEL Inter-American Proposal at the July CITEL meeting and adopt it going forward for WRC-19.

I. BACKGROUND

As licensed operators of terrestrial and Mobile-Satellite Service ("MSS") networks in, respectively, the United States and Europe, DISH and EchoStar have significant interests in the

[1] *See International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee,* Public Notice, Attachment A, DA 18-423 (April 26, 2018).

1980 – 2010 MHz and 2170 – 2200 MHz bands (collectively, the "S-band"). Looking forward, the Parties expect that their respective satellite networks, and in DISH's case its terrestrial network too, will leverage 5G technologies, which are generally expected to be standardized by the end of 2019. The Parties' individual S-band interests are as follows:

- DISH is authorized to operate two S-band MSS satellites, D.1 and T.1, from the 92.85° W.L. and 111.0° W.L. orbital locations, respectively.[2] DISH holds authorizations to provide both S-band MSS and terrestrial services to the United States.[3] DISH also holds the licenses for terrestrial downlink operation across all Economic Areas in the United States in the AWS H Block (1995-2000 MHz).[4]
- EchoStar provides MSS throughout Region 1 and is licensed to provide MSS with a complimentary ground component in the European Union.[5] EchoStar is providing commercial service utilizing its EchoStar XXI, a state-of-the-art satellite from the 10.25° E.L. orbital location throughout the EU.[6]

II. THE U.S. NATIONAL INTEREST AND AMERICAN COMPANIES PROVIDING SERVICES IN THE S-BAND

Given how the United States has chosen to allocate and use the S-band spectrum, View A represents the most logical position and one that will preserve flexibility for impacted licensees in the United States, hence serving the U.S. national interest. The United States has allocated 1850-1990 MHz band as terrestrial PCS service, the spectrum at 1990-2000 MHz on a primary

[2] *See* New DBSD Satellite Services G.P., IBFS File No. SAT-MOD-20070919-00129 (granted Apr. 2, 2008); Gamma Acquisition L.L.C., IBFS File No. SAT-MOD-20070529-00075 (granted Nov. 28, 2008).

[3] *See id.*; New DBSD Satellite Services G.P., FCC Radio Station Authorizations, Call Signs T070272001 *et al.* (granted Mar. 7, 2013); Gamma Acquisition L.L.C., FCC Radio Station Authorizations, Call Signs T060430001 *et al.* (granted Mar. 7, 2013).

[4] *See* FCC Public Notice, *Auction of H Block Licenses in the 1915-1920 MHz and 1995-2000 MHz Bands Closes, Winning Bidder Announced for Auction 96*, DA 14-279, Feb. 28, 2014. In addition to the AWS-4 frequencies (2000 – 2020 MHz and 2180 – 2200 MHz), other portions of the S-band have been allocated for terrestrial use in the United States. The spectrum at 1980-1990 MHz, in addition to other frequencies, has long been licensed and designated for large scale downlink (DL) terrestrial IMT operations. *See* Part 24 of the Commission's rules, Personal Communications Services, 47 C.F.R. §§ 24.1 *et seq.*

[5] See Commission Decision of 13 May 2009 on the selection of operators of pan-European systems providing mobile satellite services (MSS), 2009/449/EC.

[6] *See id.*

basis for mobile and fixed services, and 2000-2020 MHz for mobile, fixed and MSS on a primary basis. There is no mobile satellite service allocation in the 1850-2000 MHz band.

The Parties urge the FCC to adopt View A as the U.S. proposal for at least three reasons:

- View A reflects the current regulatory regime of the United States and is the basis on which DISH is constructing and deploying its terrestrial services.
- The characteristics and deployments of terrestrial and satellite systems are expected to vary from country to country and are best addressed on a bilateral basis to take into account these specific technical characteristics. To address this, several technical and operational options have been identified in the ongoing studies within ITU-R WP 4C and WP 5D that can be adopted by administrations, based on actual system characteristics shared during the bilateral coordination processes. Administrations could also leverage newer technologies being developed as result of the development of 5G to identify and adopt additional technical and operational measures to ensure compatibility between the satellite and the terrestrial components of IMT.
- View A ensures more effective and efficient use of the S-band by not creating restrictions based on a worst-case analysis that ignore the impact of realistic system characteristics, constraints resulting from MSS-MSS coordination activities, and various technical and operational measures documented as part of these studies.

View B, on the other hand, should be rejected because it would result in inefficient restraints on services that would not benefit U.S. consumers and would conflict with existing FCC technical rules. As an initial matter, View B recommends restrictions on downlink terrestrial operations that are more burdensome than the FCC's existing Part 27 rules. In particular, 47 C.F.R. §27.50 permits base station transmission in the frequency bands 1990 – 2020 of 1640 W/MHz in more densely populated areas and 3280 W/MHz in less densely populated areas. This corresponds to 62 dBm/MHz and 65 dBm/MHz, respectively. View B, on the other hand, would impose a 23 dBm limit into the antenna, which effectively forecloses the use of the spectrum for terrestrial downlink. In addition, View B reflects a reliance on studies based on worst-case analysis and without any consideration of how individual MSS and

terrestrial operators will be able to coordinate with one another in particular contexts using realistic system characteristics.

Additionally, proponents of View B refer to a study submitted in WP 4C that predicts interference into satellite systems as far as 10,000 km from a terrestrial deployment. If this study were accurate, then MSS operations over Europe and other places should be observing interference from downlink terrestrial deployments in 1980 – 1995 MHz in the Americas. The fact that MSS systems are being deployed globally indicates that compatibility between the terrestrial and satellite components of IMT can be achieved. View A is flexible enough to allow these real-world conditions to be recognized, and to solve problems as they may arise through bilateral activities.

Given that terrestrial and MSS systems will have varying system characteristics and the applications being supported by each are going to vary from system to system, the most practical way to assess the potential interference and compatibility and ensure effective and efficient use of the S-band is through bilateral coordination between neighboring administrations. In fact, since actual technical and operational characteristics are expected to be exchanged during such coordination, these cross-border discussions can result in more operational flexibility than would be obtained by relying solely on worst-case compatibility analyses presented during the study cycle for WRC-19 Agenda Item 9.1, Issue 9.1.1. These discussions can facilitate use of actual technical and operational characteristics of any two systems. This approach will also enable use of realistic propagation conditions (including terrain and clutter effects) and use of protection criteria based on actual link margins, C/I+N values, and services that are expected to be offered by the two systems. The United States has over the years successfully coordinated with its

neighbors for a wide range of services and frequencies within the border area and there is no reason to change course for the use of S-band.[7]

III. CONCLUSION

For the foregoing reasons, the Parties urge the FCC to adopt View A for Agenda Item 9.1/Issue 9.1.1 in Attachment A as the FCC proposal to WRC-19, and so inform the U.S. Department of State. The United States should then submit this proposal to the upcoming meeting of CITEL PCC.II for Agenda Item 9.1, Issue 9.1.1 for adoption as a CITEL Inter-American Proposal at the July CITEL meeting and adopt this position for WRC-19.

Respectfully submitted,

/s/
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[7] *See generally* Federal Communications Commission, Index of International Agreements, *available at* https://www.fcc.gov/general/international-agreements.